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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of	)	<b>MAIL STOP APPEAL BRIEF-</b>
	)	<b>PATENTS</b>
Shigeru Yano et al.	)	
	)	Group Art Unit: 1771
Application No.: 09/913,725	)	
	)	Examiner: VO, HAI
Filed: August 17, 2001	)	
	)	Confirmation No.: 3808
For: POROUS FILM AND	)	
MANUFACTURING METHOD	)	
THEREOF	)	
	)	
	)	

**BRIEF FOR APPELLANT**

**Mail Stop APPEAL BRIEF - PATENTS**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This appeal is from the decision of the Supervisory Examiner dated January 30, 2004, finally rejecting claims 1, 2 and 5-7, which are reproduced as an Appendix to this brief.

A check covering the  \$165.00 (2402)  \$330.00 (1402) Government fee and two extra copies of this brief are being filed herewith.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. A copy of this page and the signature page are submitted in triplicate.



I. Real Party in Interest

The present application is assigned to Mitsui Chemicals, Inc..

II. Related Appeals and Interferences

The Appellant's / Appellants' legal representative, or assignee, does not know of any other appeal or interferences which will affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 3 and 4 have been canceled. Claims 8 and 9 stand withdrawn from consideration as not readable on the elected invention. Claims 1, 2 and 5-7 remain pending. No claim has been allowed.

IV. Status of Amendments

A Request for Reconsideration of the Final Rejection filed March 19, 2004, has been entered.

V. Summary of the Invention

The present invention is directed to a porous film molded from a composition comprising 25 to 55% by weight of polyolefinic resin and 75 to 45% by weight of inorganic filler. The polyolefinic resin comprises 98 to 70% by weight of a linear low density polyethylene and 2 to 30% by weight of a branched low density polyethylene. The composition further contains 0.5 to 5 parts by weight based on 100 parts by weight of the composition, of a liquid ethylene- $\alpha$ -olefin oligomer (page 4, lines 1-12).

The porous film exhibits a moisture permeability of from 1500 to 4000 g/m<sup>2</sup> • 24 hr and a uniformness of thickness of 0.15 or less; see page 5 of the specification.

The porous film is obtained by molding the composition into a film and stretching the film to provide voids within the interior of the film. This technique provides a film which is impermeable to liquids but permeable to moisture vapor. The films are suitable for use in disposable diapers and the like. Note pages 5 and 6.

It is known to add various oils and waxes to improve the properties of films obtained from compositions comprising polyolefins and inorganic filler. However, in many cases, the additive resulted in porous films having inferior properties such as inflexibility, non-uniform thickness, pinholes, exudation of the additive, low moisture permeability, etc. (pages 1-2). The comparative data in the primary reference (JP 11-158305) and in the present specification (page 24) attest to the difficulty in predicting whether a particular oil or wax or other like additive would provide a porous film having the desired properties.

The present inventors discovered that the addition of a small amount of a liquid ethylene- $\alpha$ -olefin oligomer provided porous films with excellent moisture permeability, uniform thickness, flexibility, and exudation resistance. These results could not have been predicted from the prior art.

## VI. The Issues

The sole issue raised in this appeal is as follows: whether claims 1, 2 and 5-7 were properly rejected under 35 U.S.C. §103(a) as obvious over JP 11-158305 in view of U.S. Patent No. 6,284,828 to *Takayama*.

## VII. Grouping of Claims

Claim 1 is an independent claim. For purposes of this appeal, claims 1, 2 and 5-7 stand or fall together.

### VIII. The Rejection

In the Final Rejection mailed January 30, 2004, claims 1, 2 and 5-7 were rejected under 35 U.S.C. §103(a) as unpatentable over JP 11-158305 "as evidenced by" U.S. Patent No. 6,284,828 to *Takayama*. It appears to be the Examiner's position as stated therein that it would have been obvious to one of ordinary skill in the art at the time the present invention was made to use the ethylene-alpha-olefin oligomer disclosed in *Takayama* '828 singly or in combination with the lubricant of JP '305 "motivated by the desire to influence the dispersibility of the inorganic filler, stretchability and softness of the film" (Office Action mailed February 26, 2003, page 3, lines 3-6).

In the Advisory Action mailed April 6, 2004, the Examiner elaborated on her position by stating that the compositions of both references are similar since they contain polyolefin and inorganic filler, that the polyolefin resin in the secondary reference is compatible with the liquid  $\alpha$ -olefin oligomer and "there are no reasons why such a lubricant could not have been used in combination with the porous polyolefin film for the improvement of the processability." The Advisory Action further states that the substitution of a known lubricant for another known lubricant for its known purpose would have been obvious.

### IX. The References

JP 11-158305: JP '305 (a computer-generated translation has been provided by the Examiner) discloses porous films obtained by stretching a film manufactured from a composition containing 25-50 parts by weight of polyethylene-based resin containing a linear low density polyethylene and a branched low density polyethylene, 75-50 parts by weight of inorganic filler, and 0.5-10 parts by weight of at least one compound selected from ethylenebisstearamide, methylenebisstearamide and methylenebisoleamide. According to the discussion of related art on page 1 of the document, various compounds such as fatty acid

amides, liquid paraffin, sorbitan fatty acid ester and castor bean oil have been added to the compositions in attempts to improve various properties of the porous films. However, the results have not been entirely successful. JP '305 does not mention liquid ethylene- $\alpha$ -olefin oligomers.

Takayama 6,284,828: *Takayama* '828 is directed to the preparation of polyacetal molding compositions. The motivation of the inventor is to improve the friction and abrasion resistance of polyacetal resin compositions "by improving the compatibility, dispersibility and interfacial adhesion between resins, which is obtained by blending a polyacetal resin with a specific olefinic polymer, an alkylene oxide polymer having a primary or secondary amine group(s), an inorganic filler together with, further, a lubricant if required, and melting and kneading" (column 1, lines 10-15). According to this document, polyolefinic resins and lubricants have been added to polyacetal resins to improve sliding characteristics but the results have been disappointing (column 1, line 56 to column 2, line 7). *Takayama* '828 discloses further that the alkylene oxide polymer improves the compatibility of the polyacetal resin and the polyolefinic resin (column 4, lines 52-54 and 63-65). A lubricant may optionally be added. The list of lubricants (column 5, line 32 to column 8, line 12) includes  $\alpha$ -olefinic oligomer (column 6, lines 1-6) and liquid paraffin (column 6, lines 7-10). Thus, *Takayama* '828 teaches those of ordinary skill in the art that the abrasion resistance and friction (i.e. sliding characteristics) of objects molded from polyacetal resins can be improved by adding specific polyolefinic resins, specific alkylene oxide polymers and a small amount of inorganic filler (0.1 to 20 parts by wt.). The addition of a lubricant is optional.

*Takayama* '828 is not directed to the preparation of porous polyolefin films. Moreover, the document does not disclose that the  $\alpha$ -olefinic oligomer lubricants have any affect on the polyolefins or the compatibility of the polyolefins and the inorganic fillers.

X. The Argument

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The motivation to modify the prior art references must flow from some teaching in the art that suggests the desirability or incentive to make the modifications needed to arrive at the claimed invention. In re Napier, 55 F.2d 610,613; 34 U.S.P.Q.2d 1782,1784 (Fed. Cir. 1995). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the claimed combination. In re Geiger, 815 F.2d 686,688; U.S.P.Q.2d 1276,1278 (Fed. Cir. 1987). As stated in In re Kotzab, 217 F.3d 1365,1370, 55 U.S.P.Q.2d 1313,1316-17 (Fed. Cir. 2000):

[m]ost if not all inventions arise from a combination of old elements. Thus, every element of a claimed invention may often be found in the prior art. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant [citations omitted].

Appellants submit that no disclosure exists in the cited references which would motivate those of ordinary skill in the art of preparing porous polyolefin films to modify the porous films of JP '305 in the manner suggested by the Examiner.

The porous films of JP '305 are prepared from compositions containing a polyolefin, inorganic filler and ethylenebisstearamide, methylenebisstearamide and/or methylenebisoleamide. The document further discloses that other known additives (fatty acid amides, liquid paraffin, sorbitan fatty acid ester, castor bean oil)

fail to provide the requisite properties desired in porous polyolefin films. In other words, one skilled in the art cannot reasonably predict which additives will be compatible with the polyolefin/inorganic filler blend and will not adversely affect the properties of the resultant porous films.

*Takayama* '828 is not concerned with the manufacture of porous polyolefin films. Rather, the entire thrust of the disclosure is directed toward improving the abrasion resistance and friction characteristics of components molded from polyacetal compositions. This is clearly evident from the Title (Polyacetal Resin Composition), the first lines of the specification (The present invention relates to a polyacetal resin composition . . .) and the claims of *Takayama* '838 (A polyacetal resin composition comprising . . .). The main component of the compositions of this reference is a polyacetal resin. Other required components include a particular type of polyolefin resin, an alkylene glycol polymer containing primary or secondary amino groups, and a small amount of inorganic filler.

The presence of a lubricant in the polyacetal compositions is optional. Thus, it is clear that the objectives of the invention can be attained without adding a lubricant. Several different classes of lubricants are listed in columns 5-8 of the reference including silicones,  $\alpha$ -olefin oligomers, paraffin, diphenyl ethers, fatty acid derivatives, and derivatives of aliphatic alcohols. There is no disclosure that would direct those of ordinary skill to select  $\alpha$ -olefin oligomers as opposed to any of the other listed lubricants.

There is nothing disclosed in *Takayama* '828 which suggests that the presence of the lubricants has any beneficial effects on the polyolefin resin component. The lubricants are designed to improve the molding characteristics of the polyacetal resin compositions, not the properties of the polyolefin. Thus, there would have been no motivation or incentive to those of ordinary skill in the art seeking to improve the manufacture of porous polyolefin films, to look to the disclosure of *Takayama* '828 which is concerned with improving friction and abrasion resistance of molded polyacetal resin compositions. The objectives of *Takayama* '828 were to improve the performance of molded articles prepared from polyacetal

resin compositions. JP '305 is directed to solving problems in a completely different technology, i.e. improving the properties of porous films prepared from polyolefin compositions. No motivation or incentive exists which would have led those of ordinary skill in the art seeking a solution to problems in the manufacture of porous polyolefin films, to look to the disclosure of *Takayama* '828 which is concerned with solving problems associated with improving friction and abrasion resistance of molded polyacetal resin compositions.

Appellants also note that there is no disclosure in *Takayama* '828 which would have led one of ordinary skill to select liquid  $\alpha$ -olefin oligomers as opposed to any of the other classes of lubricants disclosed therein. As a matter of fact, one of the preferred lubricants disclosed in *Takayama* '828, liquid paraffin (column 6, lines 7-10), is unsatisfactory for Appellants' purpose. Thus, liquid paraffin was used in Comparative Example 6 of the present application and the porous film made therefrom had a uniformness of thickness above the maximum value set forth in the claims. Note Table 3 on page 24. Thus, there would be no reasonable expectation that adding any of the lubricants disclosed in *Takayama* '828 in place of or in admixture with the alkylene bisamides used in JP '305 would have been successful.

Given the disparities between the porous, stretched, moisture vapor permeable polyolefin films of JP '305 and the polyacetal molding compositions of *Takayama* '828, it is not apparent to Appellants why the disclosure of *Takayama* '828 would have provided a suggestion or motivation to modify the porous films of JP '305. At best, *Takayama* '828 discloses that  $\alpha$ -olefin oligomers were known lubricants. However, the document provides no teaching to suggest adding that particular lubricant in the porous films of JP '305 with the reasonable expectation that the oligomers would successfully improve the properties of the films.

The Examiner's rationale in support of the rejection clearly is based on a hindsight reconstruction of the prior art. The mere fact that the compositions of *Takayama* '828 contain a polyolefin and an inorganic filler does not, *per se*, provide the requisite motivation. There must be a teaching in the reference of some improvement or advantage which would lead those of ordinary skill to reasonably



expect that adding a liquid  $\alpha$ -olefin oligomer to the compositions of JP '305 would provide some improvement in the properties of the porous polyolefin films.

XI. Conclusion

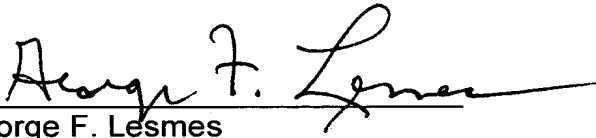
In view of the aforementioned arguments, it is respectfully submitted that the rejection of claims 1, 2 and 5-7 under 35 U.S.C. §103(a) as obvious over JP 11-158305 in view of U.S. Patent No. 6,284,828 (Takayama) is unsound and should be reversed. Such action is earnestly solicited.

Respectfully submitted,

Burns, Doane, Swecker & Mathis, L.L.P.

Date June 18, 2004

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## APPENDIX A

### The Appealed Claims

1. A porous film molded from a composition comprising 25 to 55% by weight of polyolefinic resin and 75 to 45% by weight of inorganic filler, in which the polyolefinic resin comprises 98 to 70% by weight of linear low density polyethylene and 2 to 30% by weight of branched low density polyethylene, and wherein the composition further comprises 0.5 to 5 parts by weight of liquid ethylene- $\alpha$ -olefin oligomer based on 100 parts by weight of the composition, the porous film having a moisture permeability from 1500 to 4000 g/m<sup>2</sup> · 24 hr. and a uniformness of thickness of 0.15 or less.

2. A porous film as defined in claim 1, wherein the kinetic viscosity at 40°C of the ethylene- $\alpha$ -olefin oligomer is from 50 to 100000 mm<sup>2</sup>/sec.

5. A porous film as defined in claim 1, wherein the ratio ( $S_T/T_H$ ) of the rigidity ( $S_T$ : mm) relative to the thickness of the porous film ( $T_H$ :  $\mu$ m) is from 1.3 to 2.2.

6. A porous film as defined in claim 1, wherein the ratio ( $T_S/T_H$ ) of the exudation start time ( $T_S$ : min) relative to the thickness of the porous film ( $T_H$ :  $\mu$ m) is at least 0.2 and the ratio ( $T_E/T_H$ ) of exudation end time ( $T_E$ : min) relative to the thickness ( $T_H$ :  $\mu$ m) is at least 0.4.

7. A porous film as defined in claim 1, wherein the thickness of the porous film is from 10 to 300  $\mu\text{m}$ .